

8728

-001

Work Order ID 159170***159170***

Page 1

Wednesday, April 05, 2017 1:32:17 PM

Item ID: D2939-1BL **Accept** ***N900040100*** **Setup** **Start** ***NS1***
Revision ID: **Stop** ***NS2***
Item Name: Saddle LH In, 206
Start Date: 4/6/2017 **Start Qty:** 4.00 ***4*** **Cust Item ID:**
Required Date: 4/21/2017 **Req'd Qty:** 4.00 ***4*** **Customer:**
Reference: SCHEDULED/URGENT

Approvals: **Process Plan:** DAS 21 **Date:** APR 06 2017 **Tooling:** **Date:** **Run** **Start** ***NR1***
QC: 9-89 **Date:** **SPC (Y/N):** **Date:** **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D2939	Rev C

100

2.69

100

HAAS 3

HAAS CNC vertical machine #3

HAAS CNC VERTICAL MACHINING #1

Memo

1.87

Program part number and batch number.

1-Inspect part number and batch number are programmed correctly.

2-Machine Step No 1 of Folio and visually inspect as per dwg D2939 & attached Dimension Sheet

3-Machine Step No 2 of Folio and visually inspect as per

4

0

DAS

45

9-89

17-4-12

110

0.00

110

Mill Conv

Conventional Milling Machine

CONVENTIONAL MILLING MACHINE

Memo

0.32

Machine Keyway and inspect per attached dimension sheet

4

0

DAS

45

9-89

17-4-12

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
240 24 08-8									
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____							

Work Order ID 159170

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Page 2

Item ID: D2939-1BL Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Saddle LH In, 206
Start Date: 4/6/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 4/21/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference: SCHEDULED/C

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC1- Inspection performed by CMM <i>QC2</i> Memo	0.00 0.00				<u>9</u>	<u>0</u>		DAS 45 17-4-12 9-89
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.08				<u>4</u>	<u>0</u>		DAS 08 9-89
140 *140* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.45				<u>(Y4)</u>	<u>0</u>		2017/04/13 BEB.

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
2AG 2A 08-0								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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159170

Page 3

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 4/6/2017 **Start Qty:** 4.00 ***4***

Cust Item ID:

Required Date: 4/21/2017 **Req'd Qty:** 4.00 ***1***

Customer:

Reference: SCHEDULED/C

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

**Insp.
Stamp**

0.00

150

0.00

SprayPaint

Memo

MASK ALL HOLES AS PER PAR16-484

Primer 136082
Paint 134120
clear 133154

APR 19 2017

QC14- Inspect Spray Paint

0.00

160

0.04

QC

Memo

Quality Control

DAS
33
9-86
APR 24 2017

Identify as per dwg & Stock Location: 5F34/

0.00

170

0.04

Packaging

Memo

Packaging

APR 7 4 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
3AQ 12 888				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 159170

Wednesday, April 05, 2017 1:32:17 PM

159170

Page 4

Item ID: D2939-1BL Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Saddle LH In, 206
Start Date: 4/6/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 4/21/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference: SCHEDULED/C

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.40							
Quality Control									

17/4/26 

DAS
21 APR 24 2017
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Picklist Print

Wednesday, April 05, 2017 1:32:16 PM

Page 1

Work Order ID: 159170

159170

Parent Item: D2939-1BL

***D2939-1BL ***

Parent Item Name: Saddle LH In, 206

Start Date: 4/6/2017

Required Date: 4/21/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP: B00.06.26New DWG rev (mpp 2069)EC
IPP Rev:C As per Rev C 07-03-19 JLM IPP REV:D 15.10.09
ADDED BL DD VERF:JLM IPP REV:E 16.01.22 PAR16-
484 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-001		Manufactured	No			100	Each	37.0000	1	4			

D6101-001

Saddle Billet

Location

Loc Qty

Loc Code

MAT042

37

151620

1

153932

16

155195

20

DAS
45 17-4-10
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
240 24 24				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

DART AEROSPACE LTD	Work Order:	159170
Description: 206 Saddle, Inboard, Left side	Part Number:	D2939-1
Inspection Dwg: D2939 Rev. C		Page 1 of 1

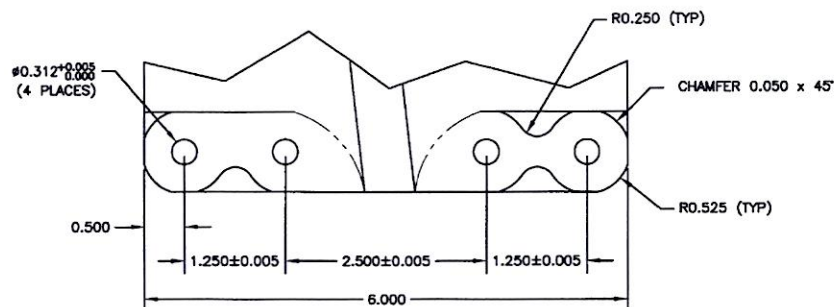
Inspect dimensions highlighted on inspection sheet drawing D2939 Rev. C and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
A	0.100	0.140		0.122	0.123	0.123	0.121		
B	0.100	0.140		0.122	0.123	0.123	0.125		
C	0.100	0.140		0.112	0.112	0.112	0.112		
D	0.210	0.230		0.230	0.2275	0.2275	0.228		
E	1.245	1.255		1.250	1.250	1.250	1.250		
F	1.245	1.255		1.250	1.250	1.250	1.250		
G	2.495	2.505		2.500	2.500	2.500	2.500		
H	0.510	0.515		0.514	0.510	0.512	0.511		
I	1.572	1.582		1.577	1.577	1.577	1.577		
J	2.495	2.505		2.500	2.500	2.500	2.500		
K	0.257	0.262		0.259	0.255	0.259	0.259		
L	0.312	0.317		0.314	0.314	0.314	0.314		
M	0.235	0.240		0.238	0.238	0.238	0.238		
N	0.100	0.140		0.118	0.118	0.118	0.118		
O	0.540	0.560		0.544	0.545	0.545	0.546		
P	0.490	0.510		0.496	0.496	0.496	0.496		
Q	3.715	3.725		3.720	3.720	3.720	3.720		
R	2.720	2.760		2.745	2.745	2.745	2.745		
S	0.240	0.270		0.259	0.256	0.257	0.256		
T	0.100	0.180		0.134	0.134	0.134	0.131		
U	1.625	1.635		1.630	1.630	1.630	1.630		
V	1.362	1.372		1.367	1.367	1.367	1.367		
W	0.316	0.321		0.317	0.317	0.317	0.317		
X	1.250	1.270		1.260	1.260	1.260	1.260		
Y	1.565	1.585	DT8695 A/B	1.575	1.575	1.575	1.575		
Z	0.178	0.198		0.188	0.188	0.188	0.188		
AA									
AB									
AC									
AD									
AE									
AF									
AG									
AH									
Accept/Reject									

Measured by:	9-RC
Date:	17-7-12

Audited by:	D.A	DAS
Date:	17-04-13	08 9-39

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.12.12	Reformat; Added Dim. X-Y, DT8683, DT8686, DT8690 & DT8695 A/B	KJ/RF	
C	07.03.21	Revised per drawing revision C	KJ/JLM	

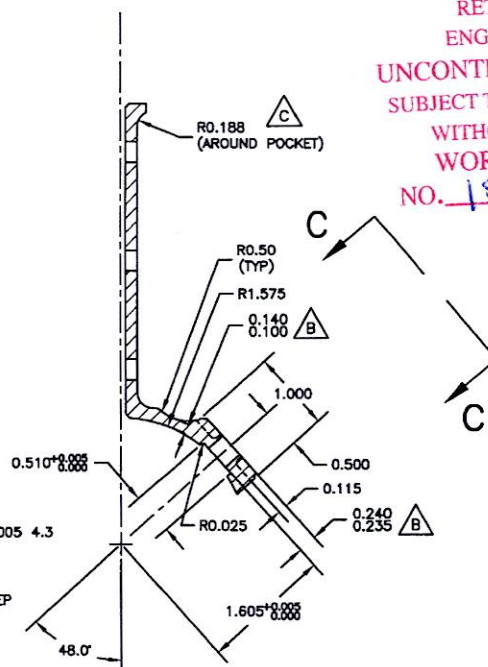


VIEW C-C

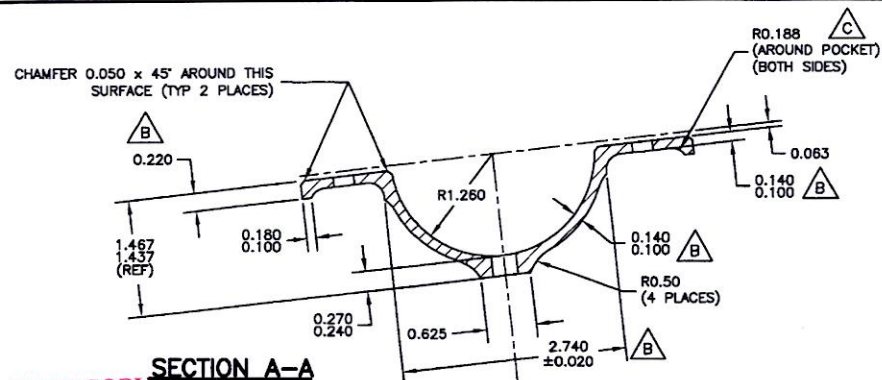
D2939-1 LH SADDLE (SHOWN)
D2939-2 RH SADDLE (OPPOSITE)

NOTES:

- 1) MATERIAL: ALUMINUM 7075-T7351 (QQ-A-250/12)
(MAKE FROM D6101-001 SADDLE BILLET, 7075)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
- 3) BREAK ALL SHARP EDGES 0.010 TO 0.020
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE INCHES
- 6) ENGRAVE PART AND BATCH NUMBER IN THIS AREA 0.010 TO 0.015 DEEP

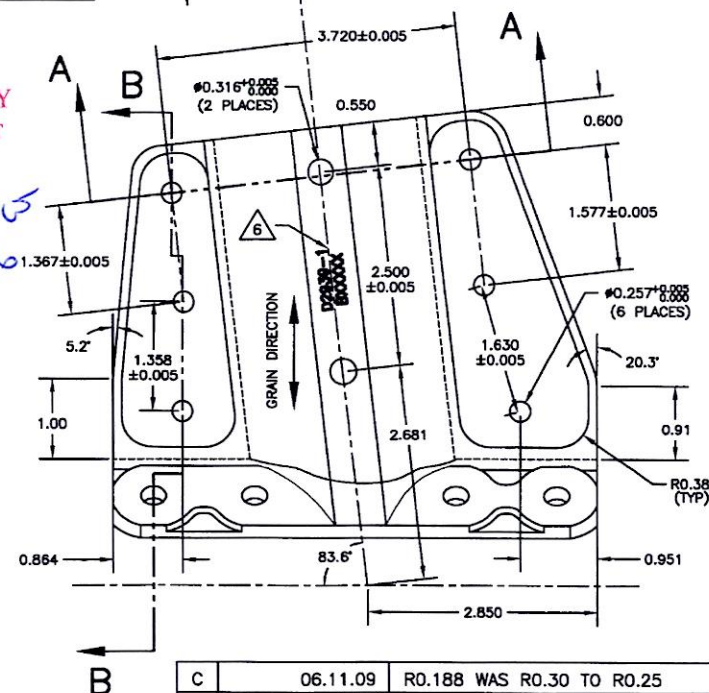


SECTION B-B



SECTION A-A

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 159170 M05
1704-06



C	06.11.09	R0.188 WAS R0.30 TO R0.25
B	00.05.29	CHANGED DEOMETRY AND MATERIAL
A	99.11.12	NEW ISSUE
DESIGN	PH	DRAWN BY C.B.
CHECKED	PH	APPROVED
DATE	06.11.09	TITLE SADDLE INSIDE
DRAWING NO. D2939		REV. C SHEET 1 OF 1
DART DART AEROSPACE USA, INC. BELLEVUE, WA		SCALE 2:3

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07.02.12